Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of)
End User Common)
Line Charges)

CC Docket No. 95-72

Comments of the Northern Arkansas Telephone Company, Inc. to Notice of Inquiry Released May 30, 1995

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I. Introduction

The use of Subscriber Line Charges (SLCs) to recover local loop costs was adopted by the FCC in an effort to reduce cost to IXC's so that intrastate toll charges could be reduced. It was the prevailing opinion that too much of the local loop cost was being assigned to the interstate toll jurisdiction and that increased cost recovery should come from the local jurisdiction - by which we mean all users rather than only the interstate toll users. This customer "access charge" forced each user to pay more of the costs of his local loop. The predominant cost of subscriber plant local loops in rural areas is in the copper distribution plant and the SLC is designed to recover the cost from the user of the copper pairs. However, if the citizen is going to pay more for his local loop he should get its full value, i.e. its total bandwidth.

Sometimes, usually on a temporary, short term basis, an electronic device known as an AML (Analog Multi-Line Carrier) is used to create a second, electronically derived channel which allows the LEC to add a second customer, or a second line to the original customer's copper circuit. This "two party" POTS service has been treated in the past as two separate POTS lines since two conversations can be carried on simultaneously on the copper pair. Perhaps in this case two SLCs are appropriate; perhaps not. The "grade of service" of such an arrangement is definitely not as good as that provided by a dedicated copper pair.

II. Digital Subscriber Loop Deployment

At Northern Arkansas Telephone Company we believe that the next level of network evolution will be the conversion of the analog local loop to a digital local loop. This effort of bringing digital connectivity all the way to the home without a conversion to analog technology is the ultimate realization of the digital revolution which started in the interoffice toll facilities, moved to the central office, and is now ready for deployment in the local loop. However, if the country is to benefit from this technology, it can not be priced in a manner so as to create "haves and have nots", with only the wealthy able to pay premium prices.

Switched 56 was an early form of digital loop service. This service came in three flavors, a trunkside connection requiring 4 wires, a natural extension of the Public Switched Data Service (PSDS) network known as Type I, and two, two-wire proprietary systems, one each for the AT&T and Nortel switches known as Type II and Type III. As with most proprietary systems, the prices of these services were much too high to have much social impact. In fact, this pricing can be used as an indication of market acceptability for particular digital line pricing.

One two 2-wire system used a data rate of 144 kbps and inband signaling and the other protocol used 160 kbps with out-of-bound signaling. It would seem

that since the customer was getting only one full duplex channel, albeit at 160 kbps it would still be viewed as only requiring one EUCL charge from the user.

It was not much of a technical leap to realize that since we were successfully getting copper to carry 160 kbps, it might be possible to come up with a protocol that could use that copper pair in an even more optimal fashion, one which would open up an entire new world of opportunity for the citizens. This was the vision of those at Bell labs who came up with the ISDN standard in the early 1980's. It is a disgrace that our country lags the other developed countries of the world in ISDN deployment. A policy which seeks to charge two EUCL charges for the line will certainly not assist deployment. Such a policy also seems to have missed the existence of the D-channel which is not only the intelligent link between the end user and today's switching network, but which is also available to carry X.25 customer packets.

III. Jurisdictional Cost Recovery

It is important to remember that the cost recovery mechanisms are rather arbitrary. Because the major cost of the local loop is in the buried copper, the EUCL would best be allocated on the basis of the copper pair and not on the type of electronics being used with the pair. If the electronic, information age is to flourish, we certainly do not want to penalize innovation and creative uses of copper pairs. Rather we need to encourage the engineers to take advantage of the massive copper infrastructure now in place and better use it for the benefit of society.

IV. Methodology

In a copper pair based approach to SLC's the type I Switched 56 line would pay 2 EUCLs, Datapath Type III would pay 1 EUCL, ISDN would pay 1 EUCL and a T1 would pay 2 EUCLs. HDSC and ASDL lines would pay 1 EUCLs each.

The matter gets somewhat complicated when one goes to a fiber distribution system. Interactive Television, ITV, to a school requiring a DS3 requires a fiber local loop or a digital microwave link. In such a case where we no longer have copper pairs, the "Path Concept" seems to be an excellent methodology to adopt. If the transport media is fiber, it is likely the dominate protocol used will be SONET. The smallest, convenient payload in a SONET frame is a T1. It is difficult to work with smaller "virtual tributaries" so T1's and DS3's can't be easily equated to DS0's. The easiest approach is to set a T1 and DS3 equal to a single Path. In Nortel Transport Nodes 4 cards are required to provide 28 T1's, the equivalent of a single DS3 card. This would suggest that seven T1's could be made equivalent to a DS3. However, since all manufacturers do not do things the same way, any bandwidth weighting is likely

to be arbitrary. A rule of thumb in the market is that the price of a T1 is equal to seven or eight DS0s and the price of a DS3 is seven or eight T1s. So a weighting of seven or eight seems reasonable if one wishes to use something other than a strict Path methodology.

We believe that approaches such as these for common carriage transport available to all citizens through the public tariff approach will speed the availability of bandwidth for those who need it. Exclusive transport schemes and services may be looked at differently than tariffed services and require greater scrutiny by the Commission.

V. ISDN - The Preferred Digital Loop Service

The name Integrated Services Digital Network has caused many to believe that the provider is providing a service. ISDN is merely a digital loop technology providing common carriage. It is the logical evolution of the analog loop and should be looked at the same way one party service was looked at when multiparty lines were common. Today, one party lines are the standard and they can be expected to evolve to National ISDN Basic Rate lines as we move into the next century.

The Northern Arkansas Telephone Company was the Arkansas Trial Site for National ISDN. We serve 6,300 access lines in a low density rural area in the Arkansas Ozarks; a 658 square mile area which only has two towns having populations greater than 1,000. With our newly designed network we can provide ISDN to 97% of our customers once we have completely converted our four party lines to one party lines which should happen by mid 1996. The Arkansas Public Service Commission has mandated one party service and digital switching by mid 1997.

Our basic rates are:

	4-Party	1-Party	ISDN
Residence	$ 5.15	$10.90	$17.90
Business	15.40	21.15	28.15

Rates Including EUCL charges are:

	4-Party	1-Party	ISDN 1 EUCL	ISDN 2 EUCL
Residence	$8.65	$14.40	$21.10	$24.90
Business	21.40	27.15	34.15	40.15

The citizen wishing to take advantage of the new ISDN service must deal with CPE costs, a definite barrier to entry, because they are still artificially high from manufacturers having to design initial equipment for two proprietary forms of ISDN. The introduction of the National ISDN standard forced many of the manufactures to retrofit their equipment to accommodate the third standard creating additional cost rather than eliminating costs. For this reason, CPE costs have not come down as rapidly as expected and will have to wait until equipment designed to the single National ISDN standard enters the markets place. With these high CPE costs getting customers to convert their local loop to a digital one is no easy task. It is certainly exacerbated by loading up the copper pair with interstate jurisdictional costs through the SLC mechanism.

VI. Relevance to Centrex

Our comments are based upon our experience serving low density rural areas. LECs serving such areas having been using fiber in the feeder plant to reduce copper costs for several years. In so doing they have created high bandwidth backbone facilities which can be deployed effectively to serve the citizen. With such a backbone, Centrex switching service can be extended much further from the CO using the fundamentally low cost transport to provide many needed services to rural citizens at prices they can afford. However, multiple SLCs are a significant deterrent to this deployment. In this case the Path/copper pair methodology would allow us to use our networks in creative ways to better serve our customers.

VII. Conclusions

Artificial price barriers to entry are a disservice to the citizen, and inhibit the deployment of new wireline technology. The use of a copper pair/Path methodology will minimize these barriers.

Respectfully submitted:

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